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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,385	08/31/2001	Kohei Kato	381KA/50339	7752

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EXAMINER

KIM, RICHARD H

ART UNIT PAPER NUMBER

2871

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/943,385	<b>Applicant(s)</b> KATO ET AL.	
	<b>Examiner</b> Richard H Kim	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-20 is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                            | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Pastry et al. (US 4,794,629).

Referring to claims 1 and 4, Pastyr et al. discloses a device comprising an accelerator (see col. 1, lines 11-14); and an irradiator having a multi-leaf collimator through which a radiation beam emitted from the accelerator passes, and irradiating the beam having passed the collimator (see col. 1, lines 8-14); the multi-leaf collimator comprising leaf plate driving bodies (see Fig. 5, ref. I, II), each including a plurality of movable leaf plates and provided respectively on one side and the other side (36, 36', 38, 38'), the plurality of leaf plates and the leaf plate driving body on one side and the plurality of leaf plates of the leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates (36, 38; col. 1, lines 50-53), wherein each of the leaf plate driving bodies comprises one rotating device for engaging with the plurality of leaf plates (see Fig. 5, ref. 54, 62); and driving force transmitting/cut-off device for transmitting driving force of the rotating device to the plurality of leaf plates at the same time (see Fig. 6, ref. 66, 75, 52; col. 7, lines 55-59) by engaging the plurality of leaf plates with the rotating device (see col. 8, lines 52-56) and

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cutting off the driving force selectively for each leaf plate by disengaging the rotating device (see col. 7, lines 55-59).

Referring to claim 2, Pastyr et al. discloses a multi-leaf collimator comprising leaf plate driving bodies (see Fig.5, ref. I, II), each including a plurality of movable leaf plates and provided respectively on one side and the other side (36, 36', 38, 38'), the plurality of leaf plates and the leaf plate driving body on one side and the plurality of leaf plates of the leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates (36, 38; col. 1, lines 50-53), wherein each of the leaf plate driving bodies comprises one rotating device for transmitting driving force to the plurality of leaf plates at the same time by engaging with the plurality of leaf plates engaging with the plurality of leaf plates (see Fig. 5, ref. 54, 62; col. 7, lines 55-59); and a plurality of engaging/disengaging devices provided in a one-to-one relation to the plurality of leaf plates (see Fig. 6, ref. 50, 64) for selectively engaging and disengaging a corresponding leaf plate with and from the rotating device (see col. 7, lines 55-59). Although the reference does not explicitly state that it is in a one-to-one relation, conceivably, since Pastyr et al. discloses two disengaging/engaging devices (50,64), each of the two engage/disengage device can engage two leaf plates, resulting in a one-to-one relation.

Referring to claim 5, Pastyr et al. discloses a device comprising an accelerator (see col. 1, lines 11-14); and an irradiator having a having a collimator through which a radiation beam emitted from the accelerator passes, and irradiating the beam having passed the collimator (see col. 1, lines 8-14); the collimator comprising leaf plate driving bodies (see Fig.5, ref. I, II), each including a plurality of movable leaf plates and provided respectively on one side and the other

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side (36, 36', 38, 38'), the plurality of leaf plates and the leaf plate driving body on one side and the plurality of leaf plates of the leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates (36, 38; col. 1, lines 50-53), each of the leaf plate driving bodies comprising one rotating device for transmitting driving force to the plurality of leaf plates at the same time by engaging with the plurality of leaf plates, and a plurality of engaging/disengaging device provided in a one-to-one relation to the plurality of leaf plates and being each capable of selectively engaging and disengaging a corresponding leaf plate with and from the rotating device (see Fig. 6, ref. 50, 64; col. 7, lines 55-59).

Referring to claim 6, Pastyr et al. discloses a device comprising an accelerator (see col. 1, lines 11-14); and a rotating irradiator having a having a collimator through which a radiation beam emitted from the accelerator passes, and irradiating the beam having passed the collimator (see col. 1, lines 8-14; col. 10 lines 6-16); the collimator comprising leaf plate driving bodies (see Fig.5, ref. I, II), each including a plurality of movable leaf plates and provided respectively on one side and the other side (36, 36', 38, 38'), the plurality of leaf plates and the leaf plate driving body on one side and the plurality of leaf plates of the leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates (36, 38; col. 1, lines 50-53); each of the leaf plate driving bodies comprising one rotating device for engaging with the plurality of leaf plates, and driving force transmitting/cut-off device from transmitting driving force of the rotating device to the plurality of leaf plates at the same time by engaging the plurality of leaf plates with the rotating device and cutting off the driving force selectively for each leaf plate by disengaging with the

rotating device (see Fig. 6, ref. 66, 75, 52; col. 7, lines 55-59).

Referring to claim 7, Pastyr et al. discloses a device comprising an accelerator; and a rotating irradiator including an irradiator having a collimator through which a radiation beam emitted from the accelerator passes, and irradiating the beam having passed the collimator (see col. 1, lines 8-14; col. 10 lines 6-16); the collimator comprising leaf plate driving bodies (see Fig. 5, ref. I, II), each including a plurality of movable leaf plates and provided respectively on one side and the other side (36, 36', 38, 38'), the plurality of leaf plates and the leaf plate driving body on one side and the plurality of leaf plates of the leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates (36, 38; col. 1, lines 50-53); each of the leaf plate driving bodies comprising one rotating device for transmitting driving force to the plurality of leaf plates at the same time by engaging with the plurality of leaf plates, and a plurality of engaging/disengaging device provided in a one-to-one relation to the plurality of leaf plates and being each capable of selectively engaging and disengaging a corresponding leaf plate with and from the rotating device (see Fig. 6, ref. 50, 64; col. 7, lines 55-59).

Referring to claims 8, 9, 11 and 12, Pastyr et al. discloses a device comprising a control device from controlling the rotating device and the transmitting/cut-off device (see col. 11, lines 61-66).

Referring to claims 3 and 10, Pastyr et al. discloses the device wherein each of the leaf plate driving bodies further comprise holding device for abutting against the leaf plates to hold the leaf plate in stationary positions (see col. 7, lines 36-39).

***Allowable Subject Matter***

3. Claims 13-20 are allowable over prior art.
4. The following is a statement of reasons for the indication of allowable subject matter:  
The prior art of record, fails to teach or disclose in light of the specifications,  
engaging/disengaging or transmitting/cutting off a selected corresponding leaf plate with and  
from the rotating device by moving the corresponding leaf plate along the other direction across  
the one direction.

***Response to Arguments***

5. Applicant's arguments filed 2 September 2003 have been fully considered but they are not persuasive.
6. In response to Applicant's argument that Maughan et al. does not disclose the device wherein each of the leaf plate driving bodies comprises one rotating device for transmitting driving force to the plurality of leaf plates at the same time by engaging with the plurality of leaf plates, and a plurality of engaging/disengaging device provided in a one-to-one relation to the plurality of leaf plates for selectively engaging and disengaging a corresponding leaf plate with the rotating device, Examiner agrees with Applicant. However, the added limitations necessitated the incorporation of Pastyr et al. Examiner believes Pastry et al. reads on the claims according to the rejection above.
7. In response to Applicant's argument that Pastyr et al. discloses a plurality of rotating devices, whereas the claimed invention discloses one rotating device, Examiner asserts the entire

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rotating mechanism as a whole can be interpreted as one rotating device, since both (50, 64) are driven by one motor (52 or 66).

8. In response to Applicant's argument that Pastyr et al. does not provide a one-to-one relation, conceivably, since Pastyr et al. discloses two disengaging/engaging devices (50,64), each of the two engage/disengage device can engage two leaf plates, resulting in a one-to-one relation.

8. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H Kim whose telephone number is (703)305-4791. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703)305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Richard H Kim  
Examiner  
Art Unit 2871

RHK

  
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PRIMARY EXAMINED